



Munich Personal RePEc Archive

An Egalitarian Regime Breeds Generosity: The Effect of Endowment Allocation Procedures on Social Preferences

Yohanes Eko Riyanto and Jianlin Zhang

Division of Economics, School of Humanities and Social Sciences,
Nanyang Technological University, Global Education, Singapore
Institute of Management

January 2010

Online at <https://mpra.ub.uni-muenchen.de/21727/>

MPRA Paper No. 21727, posted 29. March 2010 08:17 UTC

An Egalitarian Regime Breeds Generosity: The Effect of Endowment Allocation Procedures on Social Preferences*

Yohanes E. Riyanto[†]

Jianlin Zhang[‡]

January 2010

Abstract

We experimentally investigate the effect of endowment allocation procedures on social preferences using a two-stage dictator game. In the first stage, participants who were randomly selected as allocators had to perform a task in order to earn money. Better performance on the task resulted in higher earnings. In our baseline meritocratic treatment, the allocators' initial endowment was set equal to their individual earnings. We compared this with an egalitarian treatment whereby the allocators' initial endowment was set equal to the average earnings of all allocators. Essentially, high performers were taxed and underperformers were subsidized by the high performers. In the second stage, the allocators had to divide their endowment with the recipients. We show that the allocators were more generous in the egalitarian treatment than in the meritocratic treatment. Interestingly, being taxed did not reduce the high performers' generosity but being subsidized did significantly increase the underperformers' generosity. Thus, being treated kindly induced the underperformers to *reciprocate forward* to other people.

Keywords: Other-regarding Behavior, Dictator Game, Endowment Allocation Procedures, Meritocratic, Egalitarian, Forward Reciprocity

JEL Classification: C91, D63, D64

*We are grateful to Jingping Li for her superb research assistance. We also thank Parimal Bag, Younghwan In, Jingfeng Lu, Wong Wei Kang, and seminar participants at National University of Singapore for their useful comments. This research benefitted from the research grant support R-122-000-107-112 awarded by the Faculty of Arts and Social Sciences-National University of Singapore.

[†]Division of Economics, School of Humanities and Social Sciences, Nanyang Technological University, 14 Nanyang Drive, HSS 04-83, Singapore 637332, e-mail: yeriyanto@ntu.edu.sg.

[‡]Department of Economics, FASS, National University of Singapore, AS2 1Arts Link, Singapore 117570, e-mail: g0402740@nus.edu.sg.

1 Introduction

Countless experimental studies have established that human beings exhibit other regarding behavior. That is, they do not only care about their own material payoffs, but also about fairness, reciprocity, and other people's well being. When they are asked to allocate their money endowment to an unknown recipient in a dictator game setting, instead of giving nothing, they typically allocate about 15%-20% (Camerer 2003).

Some explanations for this other regarding behavior have been suggested in the literature. Rabin (1993) points to the importance of the direct reciprocity motive. A person's behavior toward another person is driven by the (expected) intention of the other person toward the former. Fehr and Schmidt (1999) as well as Bolton and Ockenfels (2000) argue that other regarding behavior is primarily driven by the final distribution of payoffs among people in the reference group. All of these studies share one common thread. That is, they focus solely on factors that are directly related to allocation decisions such as the motives and consequences behind those allocation decisions, but not on other factors that are seemingly unrelated to, but could possibly influence, those allocation decisions such as the procedure by which people earn their initial money endowment. The existing theories and experimental results are silent in this respect. They disregard the possible link between the procedure by which the money endowment is generated and distributed among individuals, and the allocation decisions of these individuals.

The following scenario further illustrates the above point. Consider two distinct institutional environments. The first one is an environment characterized by a meritocratic system in which people are compensated on the basis of their individual performance, while the second one is an environment characterized by an egalitarian distribution system in which everybody receives an equal compensation. Thus, essentially, in the second environment the high performers are taxed and the underperformers are subsidized to maintain an equal compensation across people. The former environment resembles a pure capitalist system with no taxation, while the latter resembles a socialist system with egalitarian income redistribution. It would be interesting to find out whether or not people's giving behavior toward others is different in these two institutional environments. If the answer is yes, in which institutional environment would people exhibit stronger other regarding behavior? Would there be any difference in generosity between people who are

‘taxed’ and people who are ‘subsidized’ in an egalitarian environment?

We conducted an experimental investigation on this very issue in a laboratory setting using a modified dictator game. In our experiment, the participants were randomly divided into two groups and were assigned different roles. In one group, the participants were assigned the role of an allocator, while in the other group, the participants were assigned the role of a recipient. Prior to playing the allocation game, the allocators had to participate in a production stage, in which they had to answer a set of GRE- and GMAT-like questions. They were then given information on their individual scores obtained from the production stage, their individual ranking of scores among all allocators, and the general distribution of scores. Subsequently, they were given information on how their scores were going to be translated into their initial money endowment.

We conducted two experimental treatments. In one treatment, which we label the *meritocratic treatment*, the allocators were told that they would receive an initial money endowment, the amount of which depended on their individual performance in the production stage. In the other treatment, which we label the *egalitarian treatment*, the allocators were told that they would receive an initial money endowment, the amount of which would be equal for everybody. Essentially, in the latter, each allocator receives the average money endowment. The high performers would be taxed and the underperformers would be subsidized. Subsequently, in the allocation game, the allocators were asked to transfer part of their money endowment to an anonymous recipient. We compare the amount of transfer made by the allocators in these two treatments.

Two things about our experimental design are worth stressing. *Firstly*, unlike in most of the existing dictator game experiments, the initial money endowment in our experiment has to be earned by the allocators in the production stage instead of being exogenously given to them.¹ *Secondly*, from the production stage we are able to rank the allocators on the basis of their individual performance; that is, their scores. In general, the distribution of their scores follows a bell-shaped curve. We convey this piece of information to the allocators. Under a meritocratic setting, higher scores are translated into a higher initial money endowment. However, under an egalitarian setting, the high performing allocators

¹See also Konow (2000), Cherry, Frykblom, and Shogren (2002), Cappelen et al. (2007), List (2007), and List and Cherry (2007) for other dictator game experiments that require participants to earn the initial money endowment.

would receive a lower initial money endowment than under a meritocratic setting, while the underperforming allocators would receive a higher initial money endowment than under a meritocratic setting.

This paper shows that the allocators were more generous under the egalitarian regime than under the meritocratic regime. Thus, an egalitarian regime gave rise to stronger other regarding behavior. Interestingly, and rather surprisingly, being taxed did not reduce the high performers' generosity. However, being subsidized by the high performers did significantly increase the underperformers' generosity, suggesting that being treated kindly by the system encouraged them to pay ('reciprocate') it forward to other people. In essence, an egalitarian system breeds generosity. Boulding (1981) formally coined the term serial reciprocity to refer to this kind of generous attitude.

"A very interesting aspect of reciprocity is what might be called serial reciprocity in which gift from A to B creates a generalized sense of obligation on the part of B. This obligation is satisfied by a gift from B not to A but to another party C, who in turn satisfied his sense of obligation to another party D, and so on ... (Boulding (1973), pp. 31-32)."

Another definition of serial reciprocity is given by Moody (2008), who argued that,

"Serial reciprocity exists when people reciprocate for what they have received, for example, from a parent, a friend, a mentor, a stranger, a previous generation, by providing something to a third party, regardless of whether a return is also given to, or makes its way back to, the original giver (Moody (2008), p. 1)."

The above results also showed that the procedure by which the initial money endowment is generated and distributed significantly influenced the extent of people's other regarding behavior. At a more general level, our experimental results demonstrated that social preferences are also shaped by the surrounding institutional environment.

This paper is organized as follows. Section 2 discusses our experimental design and procedures. Section 3 presents our experimental results. Section 4 concludes the paper.

2 Experimental Design and Procedures

The participants in our experiment were undergraduate students at the National University of Singapore. They came from various academic backgrounds, such as business, science, engineering, and arts and social sciences. The experiment was conducted via the www interface at the computer lab located in the Faculty of Arts and Social Sciences of the university.

In all treatments, we implemented similar procedures to those carried out in Forsythe et al. (1994).² Participants were randomly assigned to two groups and placed in two separate rooms (room A and room B). The two groups did not have any contact before, during, or after the experiment. We then carried out a random draw to determine the role of the participants in the two separate rooms. From this draw, the participants in room A were assigned the role of allocators and those in room B the role of recipients. The allocators were aware that there were other participants in room B who acted as their recipients. Next, they were given unique, randomly generated numerical user IDs to act as personal identifiers throughout the experiment. Experimental instructions were read out loud in front of them. Communication among participants was strictly forbidden. They were requested to raise their hands if they had questions, and we attended to those questions in private. No participants participated in more than one treatment.

The experiment consisted of two stages, namely, the production stage and the allocation stage. In the production stage, allocators earned their money endowment by completing a quiz consisting of 20 GRE- and GMAT-like questions within 15 minutes. Of these 20 questions, 8 covered verbal English, 8 were mathematical, and 4 were analytical.³ A correct answer resulted in a one-point addition to their total scores, whereas an incorrect answer resulted in a one-point deduction. If a question was left unanswered, a point was neither added nor deducted. Point deductions were intended to curb the participants' incentive to guess randomly when they did not know the correct answer to a question. The scores were then translated into their money equivalent using a conversion rate of one point being equal to S\$1.00. Each participant also received S\$3.00 as a show-up

²Experimental instructions, computer screen-shots, and the complete experimental data are available upon request.

³All participants received the same set of questions, but the sequence of questions differed across participants. When the time allotted was over, participants' answers would be automatically submitted by the system to the central administration site.

fee. Note that those participants who were selected as recipients were not involved in the production stage. Their money income before the transfer received from the allocators was therefore equal to the S\$3.00 show-up fee.

The scores were shown on the allocators' computer screens immediately after all answer to the questions had been submitted. When the allotted time for answering the questions was over and the allocators still had not completely answered all the questions, the computer system would lock the screen and assign zero points for the unanswered questions. In addition to their individual scores, they were given information on their individual ranking of scores among all allocators and the general distribution of scores.

We conducted two experimental treatments, namely the *meritocratic treatment* and the *egalitarian treatment*. In the former, prior to the allocation stage, we told the allocators that their initial money endowment would be equal to the money equivalent of their individual scores plus a S\$3.00 show-up fee. In the latter, prior to the allocation stage, we told the allocators that their initial money endowment would be equal to the money equivalent of the average allocators' scores plus a S\$3.00 show-up fee. Essentially, in the latter treatment, the high performing allocators were taxed, while the underperforming allocators were subsidized.

In the allocation stage, allocators were asked to transfer part of their money endowment to an anonymous recipient located in room B. The allowed amount of transfer ranged from zero up to their total money endowment, though no decimal (cents) allocation amount was allowed. The remaining amount of money net of the transfer made went to the allocators. We compared the amount of transfer made by both the high and low scoring allocators in the two experimental treatments we conducted. We considered the meritocratic treatment as our baseline treatment.

At the end of the allocation stage, we prepared the payments to the allocators, inserted them in sealed envelopes marked with their uniquely generated user IDs, and then left them in a designated place for the allocators to collect. We also prepared the payments to the recipients according to the allocation decisions made by the allocators, inserted them in sealed envelopes, and took them to the recipients' room, where they were left in a designated place for the recipients to collect. Including the time spent handling the registration process and preparing the payments to the participants, our experiment

lasted for about 50 minutes.

3 Experimental Results

The following table summarizes the descriptive statistics of our experiment.

[ENTER TABLE 1 HERE]

In each experimental treatment, there were 36 allocators and 36 recipients. The gender composition of allocators across treatments was the same: there were 20 female and 16 male allocators in each treatment.

The mean scores for both treatments are reasonably equal. On average, allocators answered about 10 questions correctly in both treatments. However, the distribution of scores in the egalitarian treatment has a slightly larger variation than the one in the meritocratic treatment. Nevertheless, as can be seen from Figure 1, both distributions have a similar shape.

[ENTER FIGURE 1 HERE]

We run the two-sample Kolmogorov-Smirnov test to check whether both distributions are statistically identical. The null hypothesis states that the two distributions are statistically identical. Table 2 shows that the p-value from the test is 0.6150, implying that the null hypothesis cannot be rejected. In addition, we run the Wilcoxon-Mann-Whitney test to check whether the means of the two distribution functions are statistically identical. The p-value obtained from the test is 0.9774, indicating that they are not statistically different. This also implies that our experimental design does well in controlling for the possible impact of the treatments on the allocators' performance. This is important as we just want to focus our analysis on the impact of the treatments on the allocators' giving behavior without having to worry about the possible impact of treatments on the allocators' performance.

[ENTER TABLE 2 HERE]

Figure 2 illustrates the distributions of the allocators' contribution as a proportion of their initial money endowment in the meritocratic and egalitarian treatments. The front row histogram is for the meritocratic treatment, while the back row histogram is for the egalitarian treatment. The vertical axis depicts the number of allocators whose contribution rate falls within a certain range. The horizontal axis depicts the range of contribution rate. From a casual observation of the figure, it is apparent that the allocators in the egalitarian treatment have a tendency to give a higher contribution rate than the allocators in the meritocratic treatment.

[INSERT FIGURE 2 HERE]

Next, we further classify the allocators into low scoring and high scoring allocators. The former are those allocators whose scores were below the median scores, and the latter are those allocators whose scores were above the median scores. Table 3 below presents the information on the mean, median, and standard deviation of the contribution rates of all allocators, the high scoring allocators, and the low scoring allocators in both treatments.

[INSERT TABLE 3 HERE]

The average contribution rate in the meritocratic treatment is around 8.6%, while the average contribution rate in the egalitarian treatment is around 15.4%, suggesting indeed that the allocators were more generous under the egalitarian treatment than under the meritocratic treatment. The average contribution rate of the high scoring allocators in the meritocratic treatment is around 8.1%. In the egalitarian treatment, the average contribution rate is about 11.1%. These two numbers do not differ much. However, the average contribution of the low scoring allocators in the egalitarian treatment is about 10% larger than the average contribution of the low scoring allocators in the meritocratic treatment, suggesting that the egalitarian treatment induces the low scoring allocators to be more generous.

Figure 3 below illustrates the distribution of the contribution rates of the allocators in the two treatments.

[INSERT FIGURE 3 HERE]

A casual inspection of the above figure indeed reveals that, *firstly*, in the meritocratic treatment there seems to be no big difference in terms of the contribution rate between the high and low scoring allocators, as is apparent from the comparison between the first and second row histograms in Figure 3. This, however, does not seem to be the case in the egalitarian treatment. As can be seen from the comparison between the third and fourth row histograms in Figure 3, the low scoring allocators appeared to be more generous than the high scoring allocators in the egalitarian treatment.

Secondly, the high scoring allocators did not seem to reduce their contribution rate in the egalitarian treatment despite being taxed. This can be seen from a comparison between the second and fourth row histograms in Figure 2.

Thirdly, there are fewer allocators who contributed between 0% and 5% of their endowment in the egalitarian treatment than in the meritocratic treatment. This suggests that the allocators have a tendency to be more generous in the egalitarian treatment than in the meritocratic treatment.

Next, we run statistical tests to formally verify the above casual observations. The results are presented in Table 4 below. The table gives the p-values obtained from the Wilcoxon-Mann-Whitney test for the equality of means. The results indeed confirm our casual observation. The average contribution rate of all allocators in the egalitarian treatment is significantly higher than the average contribution rate of all allocators in the meritocratic treatment. Likewise, the average contribution rate of the low scoring allocators in the egalitarian treatment is significantly higher than the average contribution rate of the low scoring allocators in the meritocratic treatment. However, the average contribution rate of the high scoring allocators in the egalitarian treatment is not statistically different from the average contribution rate of the high scoring allocators in the meritocratic treatment.

[INSERT TABLE 4 HERE]

Table 5 shows a series of OLS regressions with the contribution rate as the dependent variable. The independent variables include earnings, the gender dummy that is equal to 1 if male and 0 if female, the treatment dummy that is equal to 1 for the meritocratic treatment and 0 for the egalitarian treatment, and the interactive variable between the

treatment dummy and gender.

[INSERT TABLE 5 HERE]

The regression results show that the coefficients for the treatment dummy are negative and statistically significant either at the 5% or 10% significance levels, implying that indeed the meritocratic treatment results in a lower contribution rate than the egalitarian treatment. The independent variable earnings is not significant; however, the sign of its coefficients is negative, suggesting that the contribution rate decreases with earnings.

We also run another series of OLS regressions with the absolute amount of contribution as the dependent variable instead of the contribution rate. The regression results are given in Table 6. It can be seen that the coefficients for the treatment dummy are negative and all of them are significant at the 5% significance level, implying that the meritocratic treatment leads to a lower absolute contribution. Interestingly, the coefficients for the independent variable earnings, although not statistically significant, have a positive sign. This suggests that the absolute contribution increases with earnings. When combined with our previous results on the impact of earnings on the contribution rate presented in Table 5, our analysis suggests that, even though the absolute contribution increases with earnings, the increase in the absolute contribution is less than proportionate to the increase of earnings. As a result, the contribution rate falls.

[INSERT TABLE 6 HERE]

To summarize, we thus have the following result:

Result 1 *The egalitarian treatment results in a higher absolute contribution and a higher contribution rate than the meritocratic treatment.*

Next, we specifically focus on the behavior of the low and high scoring allocators across treatments. Table 7 presents the results of a series of OLS regressions on this matter. Models 1 and 2 are the OLS regressions for the high scoring allocators. The independent variable in model 1 is the contribution rate, while the independent variable in model 2 is the absolute contribution. *DumHighTreat* is a dummy variable that takes the value of

1 for the egalitarian treatment and 0 for the meritocratic treatment. It can be observed that this dummy variable is not statistically significant in both models. This confirms our earlier result showing that the high scoring allocators do not really change their giving behavior when moving from the meritocratic treatment to the egalitarian treatment.

[INSERT TABLE 7 HERE]

Models 3 and 4 are the OLS regressions for the low scoring allocators. The independent variable in model 3 is the contribution rate, while the independent variable in model 4 is the absolute contribution. *DumLowTreat* is a dummy variable that takes the value of 1 for the egalitarian treatment and 0 for the meritocratic treatment. We can see now that the behavior of the low scoring allocators across treatments is markedly different from that of the high scoring allocators. The coefficients for the dummy variable are highly statistically significant at the 1% significance level and have a negative sign. This implies that the low scoring allocators increase their absolute contribution and their contribution rate when moving from the meritocratic treatment to the egalitarian treatment.

To sum up, we have the following result:

Result 2 (i) *Despite being taxed in the egalitarian treatment, the high scoring allocators do not become less generous in the egalitarian treatment than in the meritocratic treatment.*
(ii) *The low scoring allocators, who are subsidized by the high scoring allocators, are more generous in the egalitarian treatment than in the meritocratic treatment.*

Overall, our analysis shows that an egalitarian institutional setting generates stronger other regarding behavior than a meritocratic institutional setting. This stronger other regarding behavior is mainly shown by the low performers. It suggests that being at the receiving end of a kind act themselves encourages the low performers to reciprocate forward the generous act of the high performers to the third-party recipients. In essence, a generously egalitarian environment inculcates a *pay-it-forward* attitude. Boulding (1981), and later Moody (2008), formally coined the term *serial reciprocity* to refer to this kind of generous attitude. This notion of reciprocity is different from the standard notion of reciprocity found in the literature,⁴ which usually refers to quid-pro-quo exchanges

⁴See, for instance, Rabin (1993), Camerer (2003) and Fehr and Schmidt (2003).

between two parties. One party bestows a kind act on another party, and in exchange the latter feels obliged to pay it back to the first party. In the forward reciprocity case, instead of paying it back to the first party, the second party pays it forward to a third party.

Interestingly, the high performers' generosity was not adversely affected by the fact that in the egalitarian setting they are in effect being taxed. Our results also clearly demonstrate the endogeneity of social preferences. In particular, social preferences are shaped by the surrounding institutional setting governing the procedure by which income is redistributed among individuals.

4 Concluding Remarks

This paper investigated the effect of an endowment allocation procedure on social preferences using a two-stage dictator game. In the first stage, participants who were randomly selected as allocators had to perform a task of answering GRE- and GMAT-like questions to earn money. Better performance on the task resulted in higher earnings. From the first stage, we obtained the distribution of the allocators' scores (performance) on the task. We then provided the allocators with information on their individual ranking of scores among all allocators and the general distribution of scores.

Prior to conducting the second stage, the allocators' initial money endowment was determined. In our baseline meritocratic treatment, the allocators' initial money endowment was set equal to their individual earnings from the task. In another treatment, which we called the egalitarian treatment, the allocators' initial endowment was set equal to the average earnings of all allocators from the task. This implies that in the egalitarian treatment, the high performers were taxed, while the low performers were given subsidy by the high performers.

In the second stage, the allocators had to decide how much of their money endowment to give to other participants who were randomly designated as the recipients.

Our experimental results showed that the allocators were more generous under the egalitarian treatment than under the meritocratic treatment. Thus, in essence, the egalitarian treatment gave rise to stronger other regarding behavior among the allocators. Surprisingly, being taxed and 'forced' to subsidize the low performers did not diminish

the high performers' generosity. We showed that the contribution rate and the absolute contribution of the high performers in the egalitarian treatment were not statistically different from the contribution rate and the absolute contribution of the high performers in the meritocratic treatment.

However, the low performers who were at the receiving end of a 'kind act' of the high performers significantly increased their contribution rate and absolute contribution given to the third-party recipients in the egalitarian treatment. Essentially, the generously egalitarian environment inculcates a *pay-it-forward* attitude. The low performers may have 'felt obliged' to reciprocate for what they had received from the high performers by being more generous toward the third-party recipients. Boulding (1973) and Moody (2008) refer to this form of reciprocity as *serial reciprocity*.

Appendix

Data		Meritocratic Treatment	Egalitarian Treatment
No. of allocators		36	36
No. of recipients		36	36
TOTAL		72	72
Gender of allocators	Males	16	16
	Females	20	20
Scores	Mean	10.0000	10.1667
	Std. dev.	5.0596	3.2470
	Max	19	18
	75%	14	12
	Median	10.5	10.5
	25%	6	8.5
	Min	0	4
Earnings	Mean	13.0000	13.0000
	Std. dev.	5.0596	0.0000
	Max	22	13
	75%	17	13
	Median	13.5	13
	25%	9	13
	Min	3	13
Contribution amount as proportion of money endowment	Mean	0.0855	0.1536
	Std. dev.	0.1221	0.1662
	Max	0.5000	0.5400
	75%	0.1300	0.2700
	Median	0	0.0800
	25%	0	0
	Min	0	0

Table 1: Summary of the Descriptive Statistics

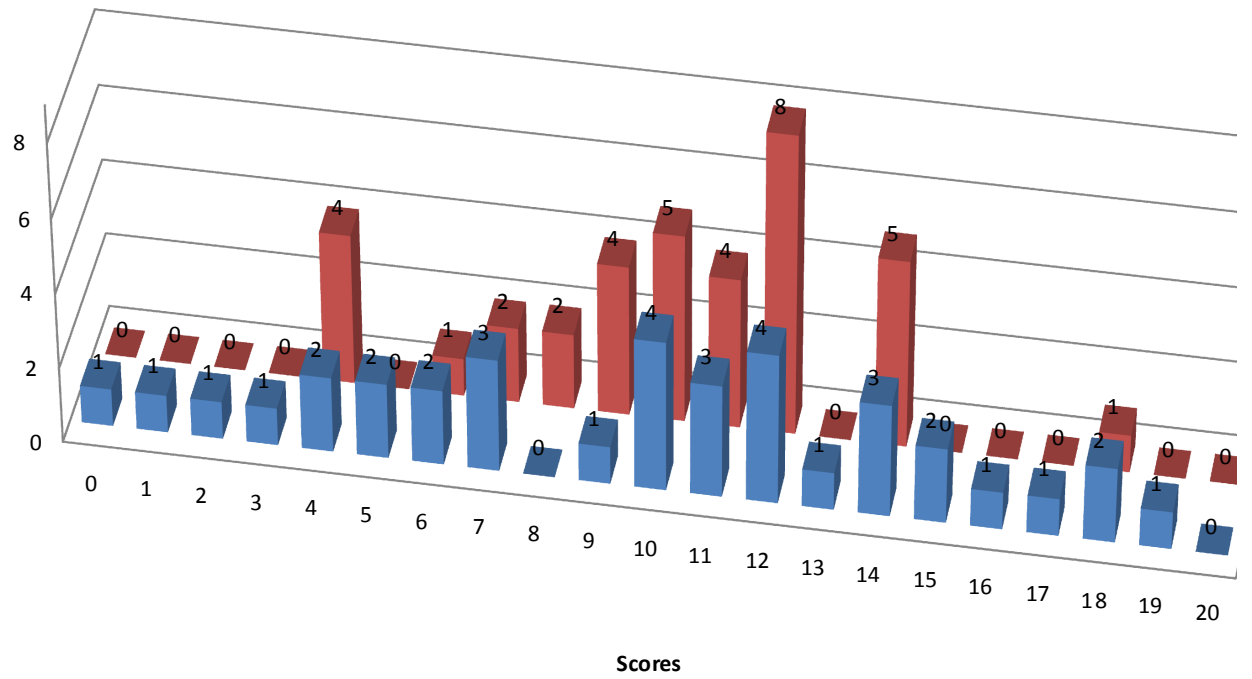


Figure 1: The Allocators' Scores Across Treatments

Statistical tests		Meritocratic vs. Egalitarian Treatments
1.	Kolmogorov-Smirnov	0.6150
2.	Wilcoxon-Mann-Whitney	0.9774

Note: Numbers in the above cells denote the p-values.

Table 2: Statistical Tests on the Allocators' Scores

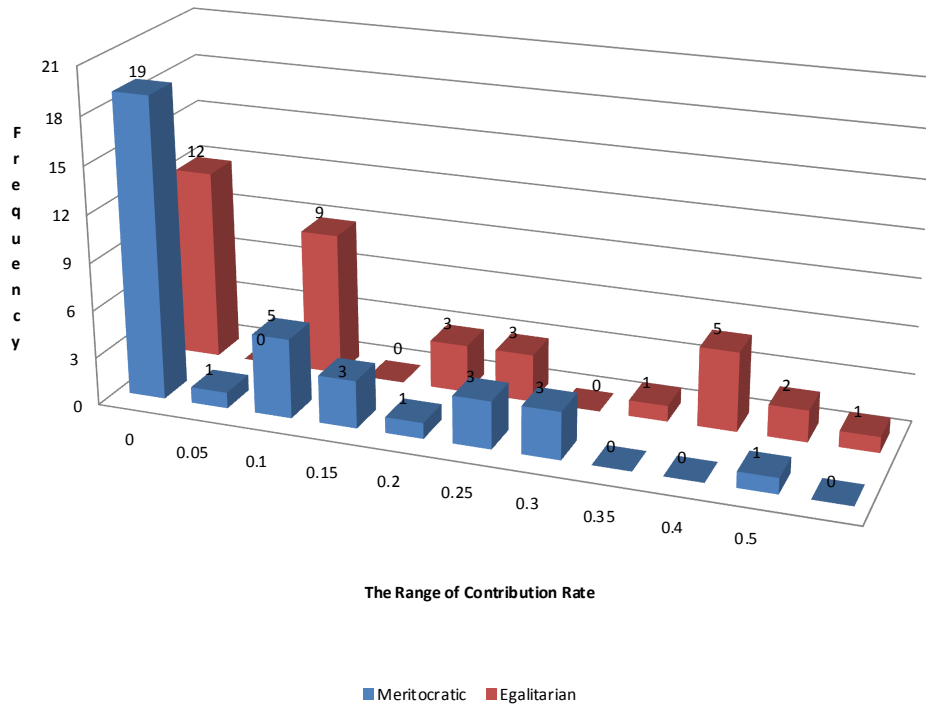


Figure 2: The Histograms of the Contribution Rates

		Meritocratic treatment				Egalitarian treatment			
		Mean	Median	Std. Dev	No. Obs.	Mean	Median	Std. Dev.	No. Obs.
Contribution rate	All	0.0856	0.0000	0.1221	36	0.1536	0.0800	0.1662	36
	High	0.0806	0.0250	0.1038	18	0.1111	0.0800	0.1506	18
	Low	0.0906	0.0000	0.1410	18	0.1961	0.1500	0.1743	18

Table 3: The Descriptive Statistics of the Contribution Rate

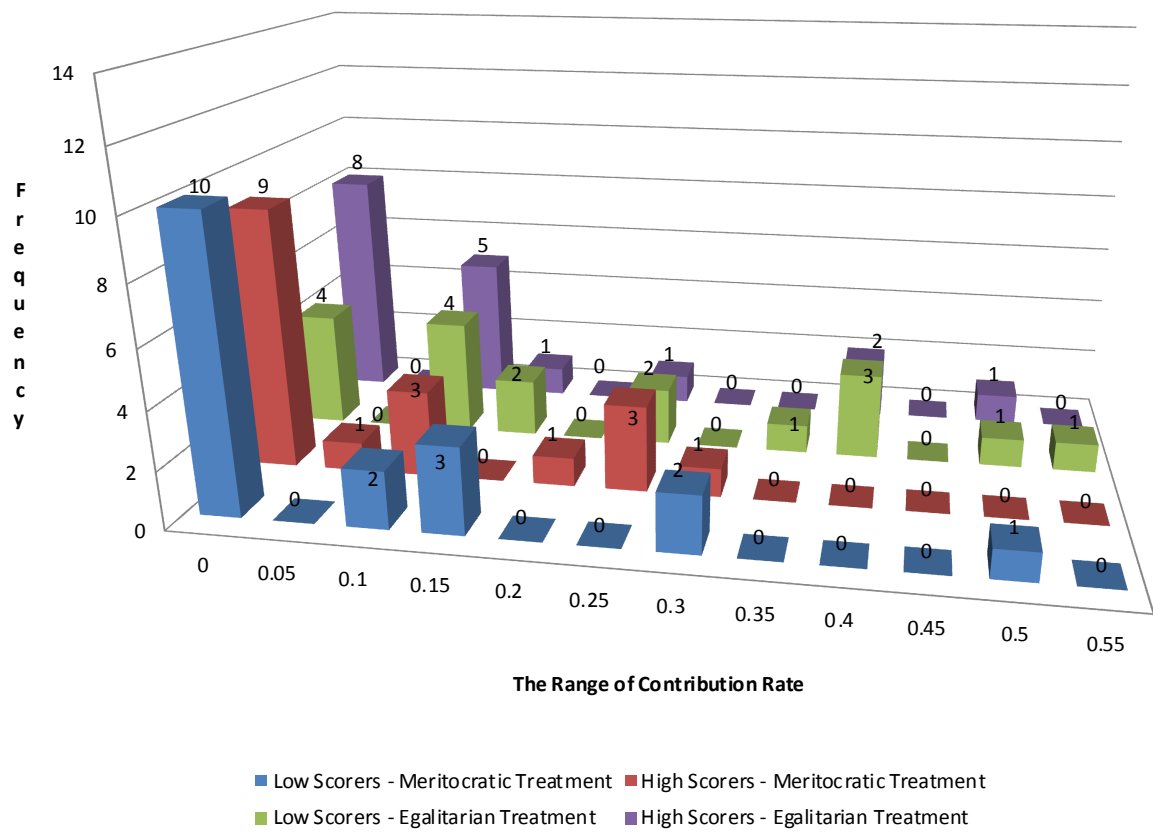


Figure 3: The Histograms of the Contribution Rate for the Low and High Scorers across Treatments

		Egalitarian treatment		
		All	High scorers	Low scorers
Meritocratic treatment	All	0.0574*		
	High scorers		0.6039	
	Low scorers			0.0335**

Note:

1. Numbers in the above cells denote the p -values obtained from the Wilcoxon-Mann-Whitney test.
2. * indicates significance at the 10% level.
3. ** indicates significance at the 5% level.

Table 4: Wilcoxon-Mann-Whitney Test for the Equality of Means

OLS Regressions (with Robust Standard Errors)
Dep. Variable: the contribution rate

Independent variables	Models					
	1	2	3	4	5	6
Earnings				-0.0017 (0.0054)	-0.0020 (0.0054)	-0.021 (0.0054)
Gender		0.0041 (0.0353)	0.0261 (0.0566)		0.0447 (0.0360)	0.0261 (0.0570)
1 if male						
0 if female						
Dumtreat	-0.0681* (0.0344)	-0.0681* (0.0342)	-0.0840** (0.0410)	-0.0681* (0.0346)	-0.0681* (0.0344)	-0.0846** (0.0411)
1 if Meritocratic treatment						
0 if Egalitarian treatment						
Dumtreat x Gender			0.0359 (0.0710)			0.0373 (0.0724)
Constant	0.1536*** (0.0277)	0.1340*** (0.0316)	0.1420*** (0.0370)	0.1752** (0.0759)	0.1592** (0.0728)	0.1691** (0.0800)
N	72	72	72	72	72	72
R ²	0.0530	0.075	0.0786	0.0546	0.0771	0.0811

Note:

- Robust standard errors are in parentheses.
- * indicates significance at the 10% level, ** at the 5% level, *** at the 1% level.

Table 5: OLS Regressions with the Contribution Rate as the Dependent Variable

OLS Regressions (with Robust Standard Errors)
Dep. Variable: the absolute amount of transfer

Independent variables	Models				
	1	2	3	4	5
Earnings			0.1060*	0.1021*	0.1004*
			(0.0543)	(0.0054)	(0.0511)
Gender		0.6250		0.5906	0.3375
1 if male		(0.4532)		(0.4424)	(0.7475)
0 if female					
Dumtreat	-0.9444**	-0.9444**	-0.9444**	-0.9444**	-1.1699**
1 if Meritocratic treatment	(0.4418)	(0.4386)	(0.4357)	(0.4331)	(0.5299)
0 if Egalitarian treatment					
Dumtreat x Gender					
Constant	2.0000***	0.1722***	0.6217	0.4106***	0.5452
	(0.3630)	(0.4116)	(0.7954)	(0.8147)	(0.8246)
N	72	72	72	72	72
R ²	0.0613	0.0878	0.0997	0.1234	0.1277

Note:

- Robust standard errors are in parentheses.
- * indicates significance at the 10% level, ** at the 5% level, *** at the 1% level.

Table 6: OLS Regressions with the Absolute Contribution as the Dependent Variable

OLS Regressions (with Robust Standard Errors)				
Independent variables	Models			
	High Scorers		Low Scorers	
	Dep. Variable:		Dep. Variable:	
	CR	AC	CR	AC
	1	2	3	4
Earnings	0.0101 (0.0096)	0.3081** (0.1625)	-0.0141 (0.0561)	-0.0348 (0.0720)
Gender	0.0755 (0.0453)	1.0728** (0.6321)	-0.0067 (0.0561)	-0.1602 (0.6447)
1 if male				
0 if female				
DumHighTreat	0.0761 (0.0571)	1.3263 (0.8313)		
1 if high scorers & egalitarian				
0 if high scorers & meritocratic				
DumLowTreat			0.1640* (0.0596)	2.0410* (0.6793)
1 if low scorers & egalitarian				
0 if low scorers & meritocratic				
Constant	-0.1295 (0.1595)	-4.3644 (2.6753)	0.2186 (0.1395)	1.0386 (0.8162)
N	36	36	36	36
R ²	0.1391	0.1990	0.1396	0.2412

Note:

- CR=contribution rate and AC=absolute contribution
- Robust standard errors are in parentheses.
- * indicates significance at the 1% level and ** indicates significance at the 10% level.

Table 7: OLS Regressions with the Contribution Rate of the Low and High Scorers as the Dependent Variables

References

- [1] Bolton, Gary and Axel Ockenfels. 2000. "ERC: A Theory of Equity, Reciprocity, and Competition," *American Economic Review*, 90(1): 166-193.
- [2] Boulding, Kenneth. (1981). *The Economy of Love and Fear; A Preface to Grants Economics*, Belmont-California , Wadsworth Publishing Company.
- [3] Colin Camerer. 2003. *Behavioral Game Theory: Experiments in Strategic Interaction*, New Jersey, Princeton University Press.
- [4] Cappelen, Alexander, Astrid D. Hole, Erik Ø. Sørensen, and Bertil Tungodden. 2007. "The Pluralism of Fairness Ideals: An Experimental Approach," *American Economic Review*, Vol. 97(3): 818-827.
- [5] Cherry, Todd, Peter Frykblom, and Jason Shogren. 2002. "Hardnose the Dictator," *American Economic Review*, Vol. 92(4): 1218-1221.
- [6] Fehr, Ernst and Klaus Schmidt. 1999. "A Theory of Fairness, Competition, and Competition," *Quarterly Journal of Economics*, 114(3): 769-816.
- [7] Fehr, Ernst and Klaus Schmidt. 2003. "Theories of Fairness and Reciprocity - Evidence and Economic Applications", in: Dewatripont, M. et.al., *Advances in Economics and Econometrics, Eighth World Congress of the Econometric Society*, Vol. 1, Cambridge: Cambridge University Press: 208-257.
- [8] Forsythe, Robert, Joel Horowitz, N. E. Savin, and Martin Sefton. 1994. "Fairness in Simple Bargaining Games," *Games and Economic Behavior*, Vol. 6(2): 347-369.
- [9] Konow, James. 2000. "Fair Shares: Accountability and Cognitive Dissonance in Allocation Decisions," *American Economic Review*, 90(4): 1072-1091.
- [10] List, John. 2007. "On the Interpretation of Giving in Dictator Games," *Journal of Political Economy*, 115(3): 482-493.
- [11] List, John and Todd Cherry. 2008. "Examining the Role of Fairness in Allocation Decisions," *Journal of Economic Behavior and Organization*, 65(1): 1-8.

- [12] Moody, Michael. 2008. "Serial Reciprocity: A Preliminary Statement," *Sociological Theory*, 26(2): 130-151.
- [13] Rabin, Matthew. 1993. "Incorporating Fairness into Game Theory and Economics," *American Economic Review*, 83(5): 1281-1302.